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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/638,499	08/15/2000	Klaus Linhard	3926.013	1283

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EXAMINER

PENDLETON, BRIAN T

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 12/18/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/638,499

Applicant(s)

LINHARD, KLAUS

Examiner

Brian T. Pendleton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 August 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 and 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

New corrected drawings are required in this application because they are illegible and contain numerous instances where different parts are referenced with the same number. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

The drawings are objected to because of the above reasons. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

Claims 6-9 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for controlling the signal level for a given position along a transmission path according to the attenuation between the two endpoints of the transmission path, does not reasonably provide enablement for controlling the signal level for a position based on the propagation time of the signal along the transmission path, the propagation time being a determined parameter of the path. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. The

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specification, pages 12-14, teaches that the attenuation element 10 is controlled in dependence upon the amount of attenuation exhibited by a signal along an acoustical path. The propagation time attributed to said path is used by the apparatus to synchronize the arrival of the acoustic signal along the path with the electric signal broadcast by the speaker at the receiving end (pages 14-15). Thus, as a parameter of the transmission path, the propagation time of the signal **does not** directly control the signal level, as required by parent claim 1. Similarly, claims 8 and 9 cite the parameters of acoustical/electrical echoes and an interference signal, respectively. While those parameters are taught in the specification as a parameter associated with a transmission path, there is no description of how the interference signal controls the signal level for a given position and there is no enablement for the process of ascertaining either interference or echo values on the basis of the transmission path. The specification only states that the "attenuation" matrix ascertains the attenuation and delay values.

Claims 12-17 and 19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification does not teach the method of **detecting** one parameter of an associated transmission function of a transmission path. Based on the specification, the controller 14 sets attenuation/amplification values based on the acoustic transmission path in the room, but does not have means for characterizing the

transmission function other than looking up attenuation and delay values in a memory/storage area. One of ordinary skill in the audio arts would attest the act of "detecting" as using various transducers to determine a transfer function of a sound space. However, there is no support for this feature other than determining which microphone has the strongest signal, which is what the controller does. The controller is not enabled to detect the attenuation or delay characteristics of the transmission path. Examiner is establishing the merits of the claims placing no weight on the detection feature.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Roddy. Roddy discloses an integrated communication system for a vehicle comprising microphones 20-26 next to passenger positions for communicating to other passenger positions via loudspeakers 30-36. The room is the vehicle 12 and there is disclosed a plurality of transmission paths (column 1 lines 58-63). Column 3 lines 25-38 state that amplifier 42 provides a fixed gain to enhance the conversation quality in the vehicle. Therefore, the amplifier 42 compensates for the loss of the speech volume from one passenger to another (see also column 1 lines 12-18). The reference teaches that volume (gain) is one parameter of the transmission function associated with a transmission path. The gain is controllable through amplifier 42. As a result, the apparatus determines the transmission path using processor 40 (column 3 lines 7-15) and controls the signal level for passenger positions according to a volume function of the transmission path. Claim 1 is met. As to claim 2, inherently the transmission path is an acoustical path in the vehicle. Regarding claim 3, attenuation between sending and receiving points in the car are predetermined and amplifier 42 has a fixed gain to compensate for said attenuation. Thus, the parameter is attenuation. Per claims 4 and 5, it was taught in the reference that the gain of the system can be adjustable by the passengers, thus the signal level can be amplified or attenuated.

Claims 1, 10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Craven et al. Craven et al teach a compensating filter 5 for a room. The filter coefficients are determined by the process of determining the transmission path (room), ascertaining the transfer function of the room by sending out a test signal from

loudspeaker 1 and receiving the signal at microphone 7 (figure 2) and controlling the amplitude and phase of the input signal in the room based on the transfer function of the room. Claim 1 is met. As to claim 10, the parameter of the transmission path (room) (transfer function) is computed by coefficient calculator 6 and stored in the compensating filter and since the filter adjusts the amplitude, the signal level is controlled. Regarding claim 11, the filter 5 is a digital filter which has a memory which have a plurality of coefficients which are multiplied by input values. The coefficients are used to attenuate time delayed input signals, therefore the filter has an attenuation "matrix".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12-17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roddy in view of Eriksson et al. Roddy discloses a controller (digital signal processor 40) which analyzes the microphone signals and determines which microphone is the sending microphone. The microphone signal is then amplified and passed to the non adjacent speakers, therefore the adjacent speaker is shut-off. This indicates that inherently there is a "level meter" which deactivates the speaker nearest to the active microphone. Applicant defines the "level meter" as a circuit element which disables a loudspeaker, therefore Roddy teaches a "level meter". In addition, Roddy

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discloses that the signals from the other microphones are stripped away by the processor 40 to prevent acoustic feedback. This teaching suggested the use of echo cancellers. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include an echo canceller in the Roddy apparatus. Eriksson et al supplied such an echo canceller. The Eriksson et al reference is directed to echo canceling in a multi-channel communication system having a plurality of microphones and loudspeakers in different positions. As disclosed in the abstract, a vehicle application was desirable for the communication system. It would have been advantageous to include the echo cancellation elements of Eriksson et al in Roddy to further help limit acoustic feedback. As to claims 13 and 14, the digital filters M1, M2, M3, etc. are FIR filters which comprise both attenuation and delay elements. Per claim 15, as stated above, the filters are FIR filters (see column 3 lines 1-4). Regarding claim 16, there are microphones 20-26 in Roddy which serve as sending points.

Loudspeakers 30-36 are receiving points, meeting claim 17.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Finn et al, "Cabin Communication System"; Takahashi et al, "Vehicle Sound System"; Lobb, "Acoustic Sound System for a Room"; McGregor et al, "Voice Enhancer System"; Moyski et al, "Communication System for Passenger Vehicle".

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian T. Pendleton whose telephone number is (703) 305-9509. The examiner can normally be reached on M-F 7-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on (703) 305-4386. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

Brian Tyrone Pendleton
December 12, 2003



XU MEI
PRIMARY EXAMINER